## CLAIMS

I claim:

1. A MEMS device, comprising:

a first plate supported on a substrate and adapted to rotate with respect to the substrate about a rotation axis lying within a plane of the first plate; and

a movable electrode coupled to the first plate and located between the first plate and the substrate, wherein when the movable electrode moves with respect to the substrate, the first plate rotates about the rotation axis.

2. The device of claim 1, wherein the first plate is supported on the substrate by a pair of torsion springs, each spring attached between the first plate and a support post connected to the substrate, said pair defining the rotation axis.

3. The device of claim 1, wherein the movable electrode is supported on the substrate by a pair of upright springs, each spring coupled between the movable electrode and the substrate, said pair defining the rotation axis.

4. The device of claim 1, wherein the movable electrode comprises a second plate parallel to the first plate.

5. The device of claim 1, further comprising one or more stationary electrodes coupled to the substrate, wherein, when the movable electrode moves toward one of the stationary electrodes, the first plate rotates about the rotation axis.

6. The device of claim 5, wherein the movable electrode and the one or more stationary electrodes form a fringe-field actuator.

7. The device of claim 5, wherein the movable electrode and the one or more stationary electrodes are formed using a single layer of a layered wafer.

8. A MEMS device, comprising:

a rotatable mass suspended at a first offset distance from a substrate; and

an upright spring coupled between the rotatable mass and the substrate, wherein the

upright spring enables rotation of said mass about a rotation axis offset from the substrate by a distance greater than the first offset distance.

9. The device of claim 8, wherein the upright spring extends from the substrate beyond the rotatable mass.

10. The device of claim 8, wherein the upright spring comprises two segments joined at one end of the spring and disjoint at another end of the spring, wherein one disjoint segment end is coupled to the rotatable mass and the other disjoint segment end is coupled to the substrate.

11. The device of claim 10, wherein the upright spring is adapted to spread the disjoint segment ends via a scissor-type motion.

12. The device of claim 8, further comprising a structure mounted on the rotatable mass and positioned at a second offset distance from the substrate greater than the first offset distance.

13. The device of claim 12, wherein the upright spring extends from the substrate beyond the structure.

14. The device of claim 13, wherein the upright spring protrudes through an opening in the structure.

15. The device of claim 12, wherein the structure is a plate and the rotation axis lies within a plane of the plate.

16. The device of claim 12, wherein the rotatable mass and the structure comprise two parallel plates connected by a link rod.

17. The device of claim 12, wherein the structure is a pixel of a segmented mirror.

18. The device of claim 8, comprising a pair of upright springs, said pair defining the rotation axis.

19. The device of claim 8, wherein the rotatable mass is a part of a motion actuator adapted to move said mass with respect to the substrate.

20. The device of claim 19, wherein the motion actuator is a fringe-field actuator.

21. The device of claim 19, wherein the rotatable mass is a movable electrode of the motion actuator and the motion actuator further comprises one or more stationary electrodes coupled to the substrate.

22. The device of claim 8, wherein the rotatable mass comprises an outer sub-structure and an inner sub-structure, wherein the inner sub-structure is adapted to move with respect to the outer sub-structure and the outer sub-structure is adapted to move with respect to the substrate.

23. The device of claim 22, comprising two pairs of upright springs, wherein each spring of one pair is coupled between the substrate and the outer sub-structure and each spring of the other pair is coupled between the outer sub-structure and the inner sub-structure.

24. The device of claim 8, wherein the rotatable mass comprises a base and a sub-structure movably coupled to the base.

25. The device of claim 24, wherein the rotatable mass comprises a motion actuator adapted to translate the sub-structure with respect to the base.

26. The device of claim 25, wherein the motion actuator is a parallel plate actuator.

27. A MEMS device, comprising an upright spring supported on a substrate, wherein:

the upright spring comprises two segments joined at one end of the spring and disjoint at another end of the spring; and

one disjoint segment end is coupled to the substrate and the other disjoint segment end is adapted to move with respect to the substrate.

28. The device of claim 27, wherein the upright spring is positioned with respect to the substrate such that the joined segment ends are at a greater distance from the substrate than the disjoint segment ends.

29. The device of claim 27, wherein the upright spring is adapted to spread the disjoint segment ends via a scissor-type motion.

30. The device of claim 27, further comprising a rotatable mass suspended at a first offset distance from a substrate, wherein:

the disjoint segment end adapted to move with respect to the substrate is connected to the rotatable mass; and

the upright spring enables rotation of the rotatable mass about a rotation axis offset from the substrate by a distance greater than the first offset distance.

31. The device of claim 30, further comprising a structure mounted on the rotatable mass and positioned at a second offset distance from the substrate greater than the first offset distance, wherein the upright spring extends from the substrate beyond said structure.